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15 January 1958

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Dear Dick:

We are forwarding herewith Progress Letter No. 15 covering work completed on System 4 during the period extending from 16 November to 31 December 1957.

Sincerely,

Burt

Burt

BFM
cb

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CMCC Doc. No. 163X5.59
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Encl #1

SAFC 23555
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Progress Letter No. 15
Contract No. A-101
System 4

16 November to 31 December 1957

CMCC Document No. 163X5.59
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(This document contains a total of 4 sheets,
including this title sheet.)

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1. General

During the period covered by this progress letter, the following work was performed:

(1) Environmental tests on major units for Model 103 of System 4 were essentially completed.

(2) Arrangements were made to proceed with over-all system environmental tests on Model 103 early in January.

(3) Construction and testing of the prototype preflight test set was completed.

(4) Construction of Model 104 of System 4 was advanced.

2. Environmental Testing

During the reporting interval major units of Model 103 were submitted to environmental test. These tests were intended to simulate the conditions expected under practical environmental conditions. Particular emphasis was placed on investigation of difficulties reported from the field in major units of system Models 101 and 102. The following summary describes the difficulties encountered in major units during these tests and the corrective measures taken.

(1) Receivers -- Certain subassembly boards developed malfunctions in environmental test. With the AGC-threshold boards, certain component modifications had to be made to avoid temperature drift problems which affected the threshold and AGC characteristics. Other minor electrical and mechanical problems which occurred were corrected. Bands 3 through 7 receivers have been taken through environmental tests successfully. The Band 1A receiver has exhibited a sensitivity loss due to local-oscillator frequency drift with high temperature and steps have been taken to correct this deficiency. The Band 2 receiver has

not yet undergone environmental test, but will be subjected to such tests early in the next reporting period.

(2) Terminal Equipment -- The programming and camera-indicator equipments have both been subjected to environmental tests. The programming equipment displayed some minor electrical defects which have been corrected. The camera-indicator unit developed two relatively small but difficult problems. The camera drive belt gave difficulty at both low and high temperatures, and was replaced by one of satisfactory design. The most persistent trouble with the indicator has been the high-voltage power supply. This has not been completely resolved, but has been identified as purely a temperature problem and steps are being taken to alleviate this in the design. The tape transport indicated no difficulties in environmental testing.

(3) Power Supply Equipment -- The power supply equipment withstood environmental testing successfully.

3. Production

During this reporting interval considerable progress was made on production of System Model 104. Assembly has been completed on a substantial number of major units and some unit testing has been initiated.

4. Preflight Test Set

All construction and testing of the preflight test set was completed during this period. The test set has been used in conjunction with rack and system tests in the test program underway for Model 103. The test set will be available for field testing and delivery with Model 103.

5. Planning

During the next reporting interval the following work is scheduled.

(1) Construction of Model 104 of System 4 will be completed.

(2) All environmental system tests will be completed on Model 103 and the system will be delivered to the field for acceptance tests.

(3) Unit environmental tests will be essentially completed on Model 104.